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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/763,199	04/25/2001	Winfried Maier	225/49630	3649

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EXAMINER

COMPTON, ERIC B

ART UNIT PAPER NUMBER

3726

DATE MAILED: 12/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n No.

09/763,199

Applicant(s)

MAIER, WINFRIED

Examiner

Eric B. Compton

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 November 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 49-53 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on November 18, 2004, has been entered.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 49 is rejected under 35 U.S.C. 102(b) as being anticipated by JP 08-219174 to SUMITOMO ELECTRIC IND CO ("SUMITOMO").

SUMITOMO discloses a method of making a synchronizing device (1) comprising: making a first syncho ring (1) from a metallic basic material; and reducing the penetration of sulfur particles into said first friction surface to maintain a constant coefficient of friction.

The reference discloses

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The double layer construction synchroniser ring is free from sulphurising corrosion when used in lubricating oil contg. sulphur, has stable friction coefft. of more than 0.1 at synchronisation, and has good mechanical properties.

Derwent English Abstract.

4. Claims 49-52 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 63-023049 to TOYOTA.

TOYOTA discloses a method of making a synchronizing device (1) comprising: making a first syncho ring (4) from a metallic basic material, i.e., steel; and providing a nitriding treatment to form a hardened layer having "excellent wear resistance and **stable friction coefficient can be obtained**, and durability and operability of the speed changer can be improved." JPO Abstract (emphasis added). The synchronizing device is used in an automobile transmission and will be used with an oil lubricant.

The nitriding treatment will form ferrous-nitrides (Fe-N). See U.S. Pat. 4,531,984 to Madsac et al (disclosing a method for nitriding steel parts in order to increase wear resistance and corrosion. Col. 1, lines 1-15. As noted by Madsac the nitriding treatment forms a white layer comprising a mixture of epsilon nitrides (Fe_2N , Fe_3N) and gamma' nitrides (Fe_4N). Col. 1, lines 29-31). In TOYOTA, the nitriding treatment, performed between 500 and 650 ° C, apparently forms at least a Fe_3N layer. See Page 263, Col. 2.

While the reference does not specifically disclose, "reducing the penetration of sulfur particles into said first friction surface to maintain a constant coefficient of friction," this step is inherently provided for. Applicant discloses that this step is accomplished by a nitride-hardening step. See Specification, [0010-0011]. TOYOTA discloses that providing the nitride-hardening step to stabilize the coefficient of friction. JPO Abstract.

Like Applicant, the device is used in an automobile transmission and will be used with an oil lubricant. Thus, the presence of the nitride hardened layer will inherently reduce the penetration of sulfur particles as well.

"[T]he discovery of a previously unappreciated property of a prior art composition, or of a scientific explanation for the prior art's functioning, does not render the old composition patentably new to the discoverer." *Atlas Powder Co. v. Ireco Inc.*, 190 F.3d 1342, 1347, 51 USPQ2d 1943, 1947 (Fed. Cir. 1999). Thus the claiming of a new use, new function or unknown property which is inherently present in the prior art does not necessarily make the claim patentable. *In re Best*, 562 F.2d 1252, 1254, 195 USPQ 430, 433 (CCPA 1977).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 53 is rejected under 35 U.S.C. 103(a) as being unpatentable over TOYOTA in view of U.S. Pat. 4,460,415 to Korhonen et al ("Korhonen").

TOYOTA discloses the invention cited above. However, the reference does not disclose plasma-nitriding.

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Korhonen discloses a plasma-nitriding process for "increasing the wear and corrosion resistance of machine parts and tools." Abstract. The process forms gamma and epsilon nitrides. Col. 3, lines 25-28. The reference further notes that plasma-nitriding is an improvement over prior art nitriding treatments by significantly reducing the time it takes to perform the nitriding treatment. Col. 2, lines 18-22.

Regarding claim 53, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have performed the nitriding process of TOYOTA by a plasma-nitriding process, in light of the teachings of Korhonen, in order to significantly reduce the time it takes to perform the nitriding treatment.

Prior Art References

The prior art references listed on the enclosed PTO-892, but not used in a rejection of the claims, are cited for their teachings of forming synchronizing rings.

The prior art discloses many examples of nitriding the friction surface of a synchronizer:

JP 55-161065 (DAIDO) discloses nitriding a synchronizer to increase surface hardness.

JP 62-227750 (MIOTSUBISHI) discloses nitriding a synchronizer to increase wearability. See *also* U.S. Pat. 4,943,321 to Akutsu which discloses nitriding to stabilize the coefficient of friction. Table 8 (showing stabilizing over prior art).

JP 02-304220 (KOMATSU) discloses a method for producing speed change gear-synchronising ring - by forming ring from sintered steel, steam treating and soft nitriding treating, which "increase[es] the wear resistance and frictional performance."

JP 2000-256775 (TOYOTA) discloses an invention related to Applicant's claim 49. However, due to a later publication date of September 19, 2000, the reference does not constitute prior art.

EP 0 872 565 (TOYOTA) discloses an invention related to Applicant's claim 49. However, due to a later publication date of October 21, 1998, the reference does not constitute prior art.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric B. Compton whose telephone number is (571) 272-4527. The examiner can normally be reached on M-F, 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter B. Vo can be reached on (571) 272-4690. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Eric Compton', with a long horizontal stroke extending to the right.

Eric Compton
Patent Examiner